



Annual Freund Seminar To Feature Dr. Thomas As Speaker on Nov. 17



Dr. Thomas is the author of *Notes of a Biology-Watcher*, a column that appears regularly in the "New England Journal of Medicine."—Photo by Albutus-Yale News Bureau

Dr. Lewis Thomas, dean of the Yale University School of Medicine, will present the Twelfth Annual Jules Freund Memorial Seminar on Friday, Nov. 17, at 1 p.m., in the Jack Masur Auditorium.

He will discuss *Mycoplasmas* as Candidates for Vascular Pathogenicity.

Dr. Thomas—whose research interests now focus on infectious diseases and cellular immunity—received training in neurology and internal medicine after earning the M.D. degree *cum laude* from Harvard University Medical School in 1937.

His research career began in 1941 as a Tilney Memorial research fellow at Thorndike Memorial Laboratory in Boston City Hospital.

Five years later he entered the field of medical education, joining the Johns Hopkins University School of Medicine as assistant professor of pediatrics.

Dr. Thomas had been associated with the schools of medicine at Tulane University, University of Minnesota, and New York University, before joining Yale University School of Medicine in 1969 as professor and chairman of the Department of Pathology.

Other positions he has held include: consultant to the Surgeon

Nobelists Stein, Moore Receive Support From General Med. Sciences

Drs. William H. Stein and Stanford Moore, winners with NIA-MDD's Dr. Christian Anfinsen of the 1972 Nobel Prize for Chemistry, have contributed greatly to the explanation of basic principles relating the chemical structure of enzymes to their biological function.

The work by Professors Stein and Moore and 10 research associates at Rockefeller University has been aided continuously over the past 12 years by grants from the National Institute of General Medical Sciences which total approximately \$1 million.

Their investigations, focusing mainly on the enzyme ribonuclease, have—with those of Dr. Anfinsen—firmly established that the specific catalytic action of an enzyme is not determined by the linear sequence of its amino acid building blocks, but stems from precise molecular binding properties created by spontaneous folding of the enzyme into its natural, three-dimensional configuration.

Knowledge of ribonuclease as one of thousands of enzymes involved in human biological processes is important because of its key role in digestion.

Secreted largely in the pancreas, it flows to the small intestine and breaks down diverse forms of animal and plant ribonucleic acids or RNA's present in ingested foods.



Dr. Moore



Dr. Stein

General of the Army, president of the medical board of Bellevue Hospital in New York City, consultant to the Manhattan Veterans Administration Hospital, and dean of the N.Y.U. School of Medicine.

He has also been a member of the National Advisory Child Health

(See DR. THOMAS, Page 7)

NIH'ers Gve Warm Ovation To Nobelist, Dr. C. Anfinsen

When he walked upon the stage of the Jack Masur Auditorium, Dr. Christian B. Anfinsen received a warm standing ovation from fellow scientists and NIH'ers.

Praising the Nobelist and Dr. Robert Gordon, Jr., NIA-MDD clinical director and a recent co-winner of the Stouffer Prize, NIH Director Dr. Robert Q. Marston said, "These awards . . . are strong testimonials to the importance of maintaining a rich environment for the search for vital new knowledge."

Dr. Marston quoted part of a letter sent to Dr. Anfinsen by HEW Secretary Elliot L. Richardson. "All in the Department of Health, Education, and Welfare take the deepest pride in your work . . . public service at its best. . ."

After several other speeches in his honor, Dr. Anfinsen came to the podium, paused, and said, "Underneath this suave massive exterior, I'm shivering like a bowl of jelly."

He thanked the Swedish Academy for its honor, his colleagues for their assistance, the audience for attending, and left the podium during another standing ovation.

Applicants for Study In Soviet Contact NAS

Scientists who wish to engage in research in the Soviet Union during the 1973-74 academic year may apply to the National Academy of Sciences. NAS has an exchange agreement with the Academy of Sciences of the USSR.

Scientists with doctoral degrees may apply, although emphasis under the program is on researchers with special interests in the social and behavioral sciences which focus on individual and group behavior.

Visits under the exchange program are for 3 to 12 months; scientists are compensated for loss of salary up to \$1,500 a month during their stay in the Soviet country.

Round-trip air transportation, housing, transportation within the USSR, medical services and a liv-

(See RESEARCHERS IN USSR, Page 6)

Dr. Anfinsen Is Nobelist; Third Scientist at NIH Honored as Laureate

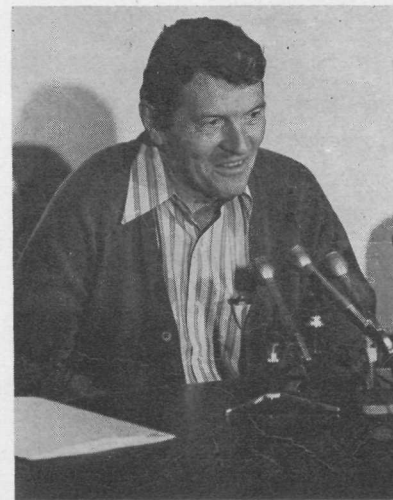
Dr. Christian B. Anfinsen of the National Institute of Arthritis, Metabolism, and Digestive Diseases and two other American scientists were awarded the Nobel Prize in Chemistry for their research into the structure and function of the enzyme ribonuclease.

Dr. Anfinsen will share the coveted prize with Drs. Stanford Moore and William H. Stein of Rockefeller University.

Heads NIA-MDD Lab

Dr. Anfinsen, chief of the Laboratory of Chemical Biology, NIA-MDD, is the third scientist at NIH to win a Nobel Prize during the last 5 years.

The first was awarded to Dr. Marshall W. Nirenberg of the National Heart and Lung Institute in



At the press conference on the campus, Dr. Anfinsen faces cameras, newspaper people, television crews and his NIH friends and colleagues.

1968. He was honored for his basic research which resulted in "cracking the genetic code."

The second was given to Dr. Julius Axelrod of the National Institute of Mental Health in 1970, for his research into the chemistry of nerve transmission.

The current three Nobelists were cited by the Karolinska Institute in Stockholm for their "funda-

(See DR. ANFINSEN, Page 5)

the NIH Record

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NIH Television, Radio Program Schedule

Radio

DISCUSSION: NIH

WGMS, AM—570—FM Stereo
103.5—Friday about 2:30 p.m.

November 10

John A. Braun, chief, Physician's Assistant Staff, BHME
Subject: Physician's Assistant

November 17

Dr. Emilie A. Black, chief, Clinical Sciences Program, NIGMS
Subject: Trauma

Interview takes place during the program *Listener's Choice*.

Television

ISSUES

WRC-TV (Channel 4), Sunday,
11 a.m.

November 19

Dr. Philip Gordon, Section on Diabetes and Intermediary Metabolism, NIAMDD—one of several panelists
Subject: Diabetes

Bache Clinic Needs Volunteer Physicians for Pediatric Services

The Bache Free Clinic is interested in developing a "well-baby" clinic and other pediatric services. Volunteer pediatricians are needed for these services which are in the planning stage.

Also, because of the Spanish-speaking community in Bethesda, the services of volunteer bilingual physicians are required.

The clinic, located in the basement of St. John's Episcopal



Warren V. Powell (II), chief of the Biological Control Section, Environmental Services Branch, DRS, is congratulated by Dr. Joe R. Held, DRS Director, on being awarded the PHS Commendation Medal for his efforts in developing NIH's Environmental Control Program and establishing procedures for identification and control of biohazards.

Church, 6701 Wisconsin Avenue, Bethesda, is staffed by volunteer physicians, nurses, pharmacists, lab technicians, and clerical help.

It is open on Sunday, Tuesday, and Thursday evenings from 7 to 10 p.m. For further information, call Dr. Herbert Y. Reynolds in the daytime at 496-4963; evenings at 530-8824; or call the clinic number in the evenings: 656-3222.

Health Benefits Plans' 'Open Season' For Fed'l Employees Begins Next Week

An "Open Season" for the Federal Employees Health Benefits Program begins Nov. 15 and ends Nov. 30.

Eligible employees may register to enroll in a plan, or those already enrolled may change their plan, option, type of enrollment, or any combination of these.

Nine plans are available to NIH employees. The three general plans are Government-wide Service Benefit Plan (Blue Cross-Blue Shield), Government-wide Indemnity Benefit Plan (Aetna Life Insurance Co.), and Group Health Association Plan of Washington, D.C.

Other plans include American Federation of Government Employees Health Benefit Plan, Alliance Health Benefit Plan, American Postal Workers Union Plan, Government Employees Hospital Association Benefit Plan, and Mail Handlers Health Benefit Plan.

In order to enroll in one of these, one must be a member of the sponsoring organization.

Or an employee may enroll in the local group practice pre-payment plan, the Columbia Medical Plan of Columbia, Md.

An envelope containing revised brochures of the three general plans plus a new booklet, entitled *Information to Consider in Choosing a Health Plan*, is being distributed early this month.

Members of an employee organization or union sponsoring a health benefits plan will be mailed a revised brochure directly from the Civil Service Commission.

Pamphlets describing other plans may be obtained from B/I/D personnel offices.

Increased benefits of all plans—guaranteed through December 1973—are shown in the new brochures.

Registration procedures will be announced when these booklets are distributed.

Registration Assistants will help employees to complete forms and will answer questions. Their names and locations will be posted on official bulletin boards and will be available in personnel offices.

The biweekly premium rates for the three major plans are compared:

Jessie M. Scott Describes Important Nursing Gains

An article by Jessie M. Scott, Director, Division of Nursing, BHME, cites the achievements in nursing because of Federal aid to students and schools of nursing.

It is published in the October issue of the *American Journal of Nursing*—the publication of the American Nurses' Association.

The illustrated article, entitled *Federal Support for Nursing Education—1964 to 1971*, describes the increase in the nursing profession, improvement in nursing education,

1972 1973 INDEMNITY BENEFIT PLAN (Aetna)

Self, high option	\$ 6.00	\$ 5.26
Self, low option	2.68	2.54
Family, high option	14.78	12.88
Family, low option	6.40	6.08

SERVICE BENEFIT PLAN (Blue Cross-Blue Shield)

Self, high option	7.27	5.91
Self, low option	2.40	2.04
Family, high option	17.50	14.11
Family, low option	5.88	4.99

GROUP HEALTH ASSOCIATION OF WASHINGTON, D.C.

Self, high option	8.47	8.22
Self, low option	4.93	4.68
Family, high option	21.79	21.10
Family, low option	13.12	12.43

Information on new biweekly premiums of other plans will be available from Registration Assistants during the "Open Season."

George Brandner Dies; Recent NCI Retiree

George A. Brandner, who retired last January as chief of the National Cancer Institute's Research Contracts Branch, died Oct. 16 after suffering a heart attack aboard his boat on Chesapeake Bay.

At the time of his death, Mr. Brandner was an administrative officer with Universities Associated for Research and Education in Pathology, Inc.

He was a graduate of Columbia University's American Institute of Banking, and worked for the Chase Manhattan Bank before serving in the Army in World War II.

Later he became training and placement officer for the old Mt. Alto Veterans Hospital in Washington, D.C.

In 1948 Mr. Brandner joined the National Institute of Arthritis and Metabolic Diseases as assistant administrative officer, transferring to NCI in 1955.

During his 30 years of service with the Federal Government, Mr. Brandner held several administrative posts in which he was responsible for research contracts and grants operations.

He is survived by his wife, Ceci, of 7105 Roslyn Ave., Derwood, Md., a son, George S., of Arlington, and a sister, Grace Schwinn, of Hightstown, N.J.

and explains DN activities in current nursing legislation.

For a copy write to: DN, 9000 Rockville Pike, Bethesda, Md. 20014.

Louise Anderson Heads New Branch at HEW

Louise C. Anderson, chief of the Clinical Center Nursing Department since 1964, has accepted a position in the Office of the Secretary, HEW.

She heads a newly formed Health Manpower Development Branch in the Division of Commissioned Personnel, Office of Personnel and Training.

Strengthens Training

The new branch was established to strengthen the training, development, and career planning for officers of the PHS Commissioned Corps. Mrs. Anderson holds the rank of Nurse Director (equivalent to Navy captain) in the Corps.

During her tenure, the CC Nurs-



Last year, in recognition of her accomplishment at the CC, Mrs. Anderson was awarded the PHS Meritorious Service Medal.

ing Department established a number of progressive developments, including the position of clinical nurse expert—employees in this capacity are consultants in specialized areas who work with nurses.

Hospitals throughout the country have copied this innovation.

Mrs. Anderson initiated the Nursing Care Conference monograph series—considered a significant contribution to nursing literature.

Awarded PHS Medal

Last year, because of her accomplishments at NIH, Mrs. Anderson was awarded the PHS Meritorious Service Medal.

Mrs. Anderson came to the CC in 1955 as assistant chief of the Nursing Department. Before that she held a number of teaching and administrative posts in universities and hospitals.

She was director of nursing at Allegheny General Hospital in Pittsburgh, and taught at Duquesne University, St. Luke's Hospital in Cleveland, Allegheny General Hospital in Pittsburgh, and Simmons College in Boston.

PEF Relies on Your Support—Donate To Davis Plan in Place of Holiday Cards

Clinical Center patients required more than \$30,000 in financial assistance for non-medical emergency expenses last year, according to Barbara A. Murphy, acting chief of the CC Social Work Department and administrator of the Patient Emergency Fund.

And the Fund, established in 1953, was able to provide that help. PEF relies entirely on voluntary support—especially from NIH employees.

In 1959, James B. Davis, Director of the Office of Administrative Services, started a tradition—the Davis Plan—employees make a donation to the Emergency Fund rather than send holiday greeting cards to each other. The Plan provided nearly one-third of the Fund's income last year.

Expenditures from the emergency fund are often small—the cost of postcards and stamps or long distance telephone calls home. Some are larger—a patient's relative may need funds for room and board in order to remain in the area and visit the patient.

Explains Plan

Mr. Davis explained that his Plan gives employees an opportunity to "lend a helping hand."

Because of the stepped-up attack on cancer and heart diseases, admissions to the CC have already increased. Other factors which eventually will lead to admitting additional patients and outpatients include a new child health wing and renovations in the west wing clinic.

Many of these patients may need financial assistance, and for this reason Mr. Davis is urging all employees to participate in the

Dr. Richard Hayes Named NIDR Special Assistant

Dr. Richard L. Hayes has been named special assistant for Oral Cancer Activities—a newly created position in the National Institute of Dental Research's Extramural Programs.

In collaboration with NCI, Dr. Hayes will evaluate ongoing research and training programs, and determine gaps and weaknesses which need attention.

Dr. Hayes holds the D.D.S. degree from the University of Michigan, and an M.P.H. from Johns Hopkins University.

Mrs. Anderson received a B.Sc. in nursing education from Simmons College, and her M.S. degree from the University of Pittsburgh. She is a graduate of Massachusetts General Hospital Training School for Nurses.

Mrs. Anderson has authored a number of articles on the nursing profession in administrative and research roles which have appeared in professional journals.



Knowing that her mother is not too far away helps a young patient. The Patient Emergency Fund is often asked to financially assist a relative who wishes to remain near the CC while the patient is hospitalized. Through the Davis Plan YOU can help that wish come true.

plan that he evolved.

A booklet, *A Gift that Lasts through the Year*, which further describes the work of the Patient Emergency Fund, is available from the CC Social Work Department, Bldg. 10, Ext. 64503.

First CFC Campaign Report Reveals DRG and FIC Running Neck and Neck

First returns on NIH contributions to the Combined Federal Campaign show that the Division of Research Grants and the Fogarty International Center have exceeded 98 percent of their dollar goals.

Figures for the 2-week reporting period indicate that NIH has raised \$94,643, 38 percent of its 1972-73 goal of \$251,000. Total employee participation thus far is 25 percent.

Dr. Kenneth M. Endicott, BHME Director, who is CFC Vice Chairman, complimented the DRG and FIC staff for their "extraordinary" performance.

He noted that the dollar total received to date far exceeds con-

Law on Wage Grade Pay Will Affect Employees On Two Shifts in Stages

A new law governing Wage Grade pay will affect NIH employees in two stages—on Nov. 26, employees on the second shift (3 p.m. to midnight) will receive a 7½ percent shift differential and employees on the third shift (11 p.m. to 8 a.m.) will receive a 10 percent differential.

Law Cited

The law also gives employees who are reduced in grade through reduction in force 2 years' pay at the higher grade.

When the Economic Stabilization Act of 1970 expires or on April 30, 1973—whichever comes first—a 5-step pay schedule will replace the present 3-step one for non-supervisory employees.

The Civil Service Commission has yet to determine the conversion rates for present employees. However, no employee will advance more than one step through conversion.

Waiting periods for the new steps will be 26 weeks in step 1, 78 weeks in step 2, and 104 weeks in steps 3 and 4.



Thomas C. Leffingwell, CFC coordinator for FIC, shows Sandy R. Oliphant, DRG keyman, how their units are racing ahead toward their goal.

Applications Accepted For DRR Minority Grants

New applications for Minority Schools Biomedical Support grants for fiscal year 1973 are being accepted up to Dec. 1 by the General Research Support Branch, Division of Research Resources.

Institutions with ethnic minority student enrollment of 50 percent or more are qualified to apply. This program, which was initiated in June of this year, is designed to strengthen the capabilities for biomedical research in such institutions of higher learning.

Use of Funds Explained

Funds may be used by the institutions for a broad range of purposes, including support of faculty release time for research, biomedical research programs, salaries of research personnel, research training programs, research resources, and consortia biomedical programs.

Information about the program and application forms may be requested from the General Research Support Branch, (301) 496-6748, Division of Research Resources, NIH, Bethesda, Md. 20014.

Booklet Explains Project To Recruit Young People For Nursing Professions

Four brochures on *Youth Opportunities Unlimited in Nursing* have been issued by the Division of Nursing.

The pamphlets, based on a project undertaken by the American Nurses' Association under a DN contract, explain that the nursing profession needs young people who know about life in the inner-city.

They also point out that nurses and community leaders need to help inner-city students meet nursing school entrance requirements.

Individual brochures are entitled *Making It In Nursing*; *Others Have Done It—Why Not YOU?*; *Group Leadership Guidelines*, and *Program Guide*. For free copies of the brochures write to DN, NIH, Bethesda, Md. 20014.

A color film, "Nursing Scene," a part of the ANA project, encourages minority members towards nursing careers. It is available on free loan from the National Audio-visual Center, Washington, D. C. 20409.

Scientists Produce Lung Cancer in Rats By Using Products of Cigarette Smoke

A team of scientists at the National Cancer Institute has succeeded in producing lung cancer in rats by exposing them to products of cigarette smoke.

Dr. Mearl F. Stanton, Eliza Miller, Constance Wrench, and Robert Blackwell describe their new technique in a paper, "Experimental Induction of Epidermoid Carcinoma in the Lungs of Rats with Cigarette Smoke Condensate," published in the current issue of the *Journal of the National Cancer Institute*.

For the first time, the scientists have developed a method in which tobacco products consistently produce in experimental animals the lung cancer that occurs most commonly in humans.

Early Research Described

In the paper, Dr. Stanton and colleagues describe experiments in which lung cancer in rats was caused by exposing them to the product of only five cigarettes.

Research on lung cancer has been severely hampered by the difficulty of producing the disease in laboratory animals, where it could be closely studied.

Attempts to produce the disease in animal lungs by forced cigarette smoke inhalation have had slight success, perhaps because most animals have better physiological means of protecting their lungs than humans.

Other techniques of applying cigarette tar directly to the lungs had previously been tried, but the number of cancers produced was very low.

In the NCI experiments, the tobacco product used as a cancer-causing agent was obtained by condensing cigarette smoke at a low temperature.

The whole condensate, or a fraction of it, was mixed with beeswax and heated until soft enough to be injected into the rats' lungs.

When it cooled to body temperature, a solid pellet formed, remain-

ing in place but allowing the condensate to gradually leak out.

Using this method, 348 rats were exposed to the cigarette tar.

During the first 2 years of the study, lung cancer or precancerous changes had occurred in 120 of the 156 rats that had died. Over half of the experimental rats are still alive and their lung condition is not yet known.

Of 143 rats treated with beeswax alone, or with a pellet containing pulverized unsmoked tobacco or cigarette ash, only two showed signs of precancerous changes.

According to Dr. Stanton, the experiment indicates that development of lung cancer requires long-term exposure to cigarette smoke products. Humans usually smoke for many years before they develop lung cancer.

The slow leaking of the cancer-causing substances from the beeswax pellet into the rat's surrounding lung tissue may well mimic the continuous exposure of heavy smokers to cigarettes, he said.

Future Use Noted

The new beeswax-cigarette tar technique is expected to be useful in testing various cigarette products for cancer-causing activity.

Dr. Stanton plans to apply the technique to test various fractions of cigarette smoke condensate in an attempt to pinpoint specific substances which may be responsible.

He also expects that the method will be used in testing experimental cigarettes, now being developed under contracts with NCI, which may prove to be less hazardous to man than cigarettes now on the market.

NLM Honors Louis Pasteur With Lobby Exhibit

Dans les sciences certains personnes ont des convictions, d'autres n'ont que des opinions. La conviction suppose la preuve; les opinions reposent le plus souvent sur des hypothèses.

Paris le 5 mai 1886. L. Pasteur

"In the sciences, certain persons have convictions, others have only opinions. Conviction supposes proof; opinion generally rests upon hypothesis." L. Pasteur, Paris, 5 May 1886 (manuscript in the NLM collection).

The National Library of Medicine honors the achievements of the distinguished investigator, Louis Pasteur, on the 150th anniversary of his birth in an exhibit which will continue until Feb. 4, 1973.

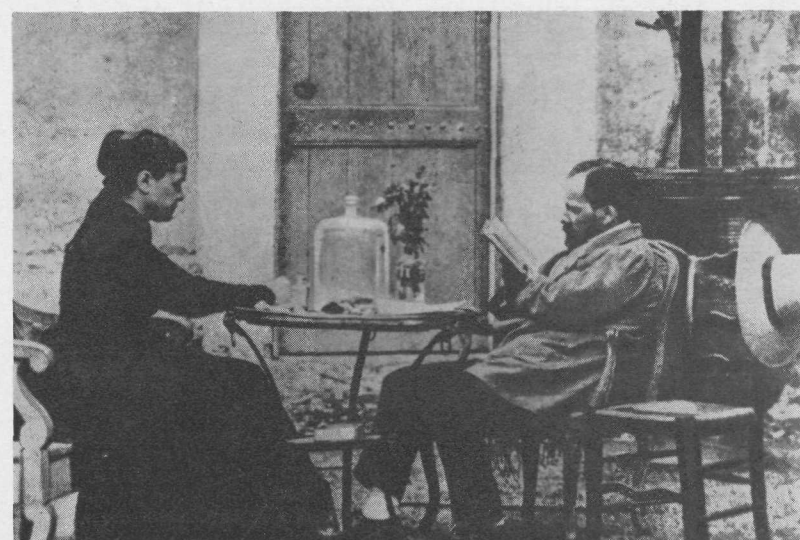
Selected books and manuscripts from the Library's collections, illustrating Pasteur's contributions to science and human welfare, are on display in the NLM lobby.

Of particular interest are the numerous manuscripts in his own hand—drafts of papers, letters, speeches, and reports prepared in his varied capacities as scientist and researcher, educational administrator, and patriot.

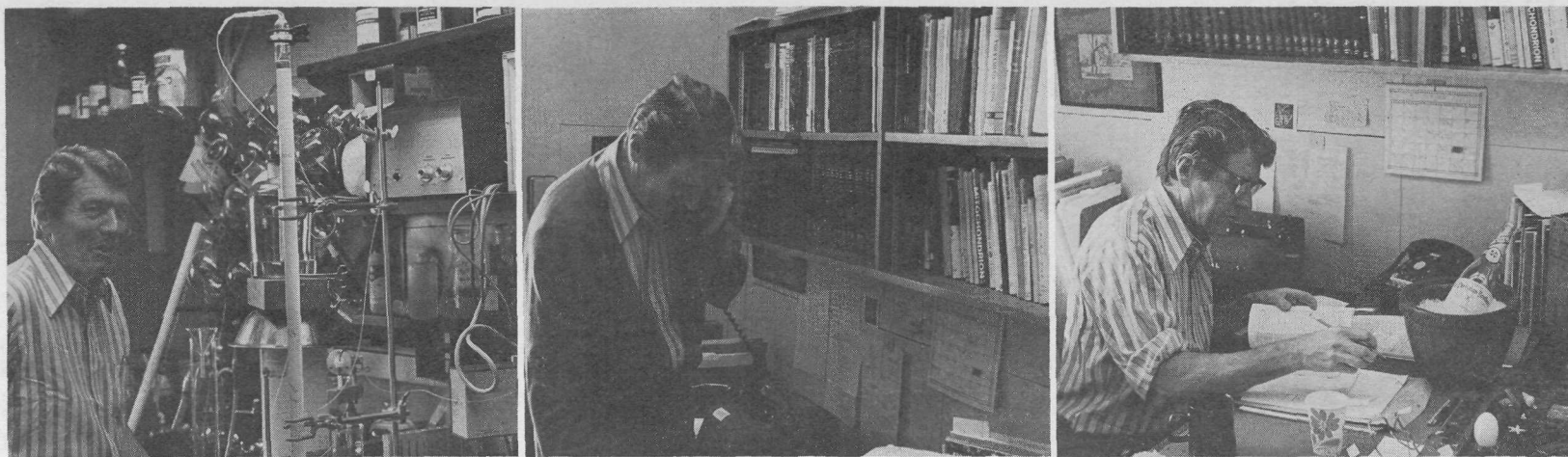
Among the materials are some of his most significant articles published in the *Comptes Rendus* (Proceedings) of the Académie des Sciences—his first paper on fermentation (1858) and his first report on rabies treatment.

The exhibit also includes prototypes of glassware that Pasteur used in his laboratory; a 20-foot linear display delineating his scientific work, and a rich assortment of pictorial material loaned by the Pasteur Institute in Paris.

"Louis Pasteur, 1822-1895" is on display during the Library's regular hours: Monday-Friday, 8:30 a.m. to 9 p.m., and Saturday, 8:30 a.m. to 5 p.m. (closed Sundays).



Pasteur dictates to his wife at their villa in Pont-Gisquet, France, about 1867.



Dr. Anfinsen smilingly went through the sequence of events starting from the moment of hearing the news of his selection as a Nobel Prize winner: The scientist was in his lab performing column chromatography on a protein mixture when he was asked to accept a call in his office—it was a reporter with the news that the researcher was to share the Nobel Prize in chemistry. "I can't believe it," he exclaimed. Within minutes his colleagues and friends

DR. ANFINSEN

(Continued from Page 1)

mental contributions to enzyme chemistry. They have worked with the same enzyme, ribonuclease."

Dr. Anfinsen received half of the \$98,100 prize for "his work on ribonuclease, especially concerning the connection between the amino acid sequence and the biologically active conformation."

Drs. Moore and Stein share the other half of the prize money "for their contribution to the understanding of the connection between chemical structure and catalytic activity of the active center of the ribonuclease molecule."

Awardees Praised

The Nobel awarding group concluded that "in summary it may be said that Anfinsen, Moore and Stein in pioneering studies have illuminated some of the most important principles describing the chemical structure and catalytic activity of an enzyme."

Ribonuclease catalyzes the breakdown of ribonucleic acid (RNA), an essential component of the machinery by which the living cell utilizes genetic information.

Dr. Anfinsen provided the first clue to the enzyme's structure by demonstrating that it is comprised of a single polypeptide chain.

Its complete chemical structure was subsequently elucidated by Drs. Moore, Stein and C. Hirs at Rockefeller University, and by Dr. Anfinsen and his colleagues here.

Dr. Anfinsen and his associates demonstrated that the information required to fold the polypeptide chain of ribonuclease into the specific three-dimensional form of the active enzyme resides in the sequence of amino acids.

Therefore, it became clear that this protein could be synthesized in the laboratory by joining the proper amino acids in the correct order

and then allowing the chain of amino acids to spontaneously fold.

The synthesis of ribonuclease was recently accomplished in this way by a team of Rockefeller University scientists headed by Dr. Robert B. Merrifield.

This marked the first time that an enzyme had been artificially created from chemicals in the laboratory. Such studies are basic to an understanding of normal life processes as well as of inherited metabolic diseases.

Ultimately, it may be possible to control certain hereditary metabolic diseases resulting from a specific enzyme deficiency by replacing the missing enzyme.

Drs. Anfinsen, Moore and Stein will receive their awards from King Gustav Adolf of Sweden at ceremonies to be held in December in Stockholm.

Dr. Anfinsen received his Ph.D. in biochemistry from Harvard University Medical School in 1943. He joined the National Heart Institute in 1950, returned to Harvard for one year in 1962, and then assumed his present position with NIAMDD. He and Mrs. Anfinsen live in Bethesda, Md.

DCRT Issues Publication On Statistical Analysis

Methods and computer programs for statistical analysis of variables in clinical research are described in *Transformation of Observed Distributions to Gaussian Form*, a recently released DCRT publication.

The report, written by Drs. Eugene Harris and David DeMets, details a method which preserves the power of gaussian-based statistical analysis without assuming that the original variable necessarily follows a normal bell-shaped curve.

Copies of Technical Report No. 8 may be obtained from the DCRT Scientific and Technical Information Office, Ext. 66203.

quickly massed to offer congratulations. A 1:30 p.m. press conference was arranged, Dr. Marston flew in from Cleveland to attend, the conference room, soon to be crowded, was set up with lights and cameras. After the conference, the internationally acclaimed biochemist sat at his desk to call and congratulate Drs. Moore and Stein with whom he is sharing the prize. The 3 outstanding chemists often discuss the progress of their work with the enzyme, ribonuclease.

David Tilson Is Named BHME Assoc. Director, Planning and Evaluation

David Tilson has been named associate director for Planning and Evaluation in the Bureau of Health Manpower Education. He replaces Dr. Eugene Confrey, now BHME associate director for Policy Studies.

Mr. Tilson will be the principal technical advisor to the BHME Director on health manpower planning and will coordinate the health manpower planning of programs administered by the Bureau.

He joined NIH in 1965 as chief of the Health Research Facilities Branch of the Division of Research Facilities and Resources (now DRR), and later served as assistant chief of the Office of Program Planning, OD. He was named the Director of NIH Office of Program Analysis in 1969.

Mr. Tilson began his Federal career in 1948 with the Department of the Army as an analyst and section chief in the Office of the Chief of Transportation. He later worked for the Department of the Air Force.

From 1953 to 1961, he was with the International Cooperation Administration (predecessor to the Agency for International Development), first as deputy special assistant for Operations in the Office of the Deputy Director for Mutual Defense Assistance Control and as assistant director in the Office of Participant Training.

Mr. Tilson was then named Advisor to the U.S. Mission to the United Nations for AID.

The following year, he was appointed Director of the AID Science Conference Staff.

Following this assignment, Mr. Tilson was named Director of Research in the Office of Research and Analysis, AID, after which he

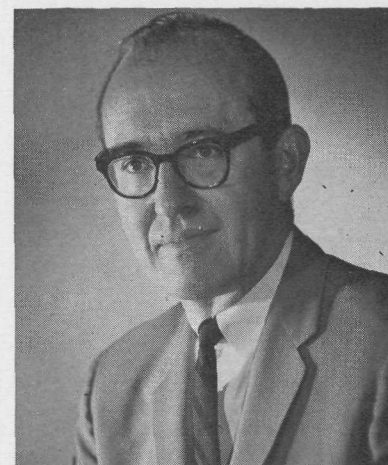
First Conference Held For Spanish-Surnamed

More Federal funds, more information about the health professions, and an admissions quota system for medical and other health schools were recommended at the first National Conference on Health Manpower Education for the Spanish-Surnamed.

The conference, sponsored by the Bureau of Health Manpower Education and the National Health Service Corps, HSHMA, was held in Chicago Oct. 21-23.

The nearly 500 delegates made over 100 recommendations.

Participants included Dr. Merlin K. DuVal, Assistant Secretary for Health and Scientific Affairs, HEW, and Dr. Kenneth M. Endicott, Director of BHME.



Mr. Tilson and his staff will prepare research and evaluation plans and assist in planning legislative programs.

transferred to NIH.

He attended the City College of New York and then the Massachusetts Institute of Technology where he received his B.S. degree. He also has taken graduate courses in Economics and Social Sciences at Columbia University.



Otis Ducker (r), recently appointed assistant director for Materiel Management, OAS, receives congratulations from James B. Davis, OAS Director. Previously, Mr. Ducker was chief, Supply Operations Branch. He has been with NIH for 19 years—the entire period with OAS. He "started in supply work during 3½ years in the Army." Mr. Ducker, whose academic training was in music education, is an accomplished musician.

RESEARCHERS IN USSR

(Continued from Page 1)

ing allowance for the investigator are provided.

Financial support for intensive pre-travel study of the Russian language by long-term researchers is also available.

Similar exchange arrangements are available with the academies of eastern European countries.

Preliminary inquiries by phone or mail should be made immediately to the Office of the Foreign Secretary (USSR/EE), National Academy of Sciences, 2101 Constitution Avenue, N.W., Washington, D.C. 20418. Telephone: 961-1226.

Book Stresses Relationship Between Speaking, Reading

Most children learn to speak easily, but struggle with reading skills; this problem is discussed in a new book—*Language by Ear and by Eye: The Relationships Between Speech and Reading*—edited by a National Institute of Child Health and Human Development health scientist and a professor of linguistics.

Written by Specialists

The book, a collection of 22 articles written by specialists in several speech fields, is an outgrowth of an NICHD-sponsored conference on The Relationships Between Speech and Learning to Read.

It is edited by Dr. James F. Kavanagh, NICHD, and Dr. Ignatius G. Mattingly, professor of Linguistics, University of Connecticut, and is available through the MIT Press.

Two Products Developed Under NHLI Contracts Selected by 'I.R. 100'

Two separate advances in the development of blood- and tissue-compatible materials, each the product of contract-supported research under the direction of the National Heart and Lung Institute's Medical Devices Applications Program, have been selected in the international "I.R. 100" competition as among the 100 most significant new technical products of the year.

A "microfiber lining for artificial organs," developed by Dr. Joseph S. Byck, Union Carbide Corporation, and a "non-thrombogenic (blood clot preventive) treatment for plastics," developed by Dr. R. I. Leininger, Gerald Grode, Dr. Richard D. Falb, and Dr. Henry Grotta, Battelle Memorial Institute, were among the winners chosen by the Editorial Advisory Board of Industrial Research, Inc.

The I.R. 100 winners were announced last month at the Museum of Science and Industry, Chicago, where the scientists and engineers assembled to exhibit their innovations and attend an awards banquet.

The Battelle Memorial Institute and Union Carbide Corporation are two of 16 research and development firms that receive NHLI research-contract funds for the sole purpose of biomaterials development.

The winning projects represent many research approaches being pursued in the development of truly biocompatible materials.

Dr. Byck and his colleagues' winning entry consists of an ultrathin non-woven fabric that can be bonded to the blood-contacting surfaces of heart-assist devices.

The synthetic microfibers (of polypropylene) serve as a scaffold for the attachment of living fibroblasts and endothelial cells that,

Richardson Explains Views In Current 'Reader's Digest'

HEW Secretary Elliot L. Richardson has written an article entitled "The Down-to-Earth Truth About Big Spending," in the current—November—issue of *Reader's Digest*.

The article explains the Secretary's views on why money alone cannot solve major national problems, on the problems generated by "legislative overpromise," and on the efforts that are being made to cut away Government red tape.

when formed, present a surface of living tissue to the blood.

For added strength and to provide a biocompatible surface while the tissue lining is still forming, the microfibers are coated with a thin (1 micron) layer of the polymer, Parylene-C.

The Union Carbide team also has developed a special process, known as "vertical drafting," whereby pore size can be varied in different layers of the microfiber web as it is being formed.

Thus, large pores in the surface layer permit the entry of whole cells beneath the surface, whereas smaller pores in deeper layers mechanically entrap the sheath of living tissue formed by the proliferation of these cells.

The clot-preventive treatment for plastics developed by the Battelle research team involves the chemical bonding of heparin, an anticoagulant, to any of various synthetic materials to form a clot-inhibiting surface.

Previous attempts to accomplish this met with only temporary success, as the coating eventually leached or eroded away to expose the thrombogenic surface underneath.

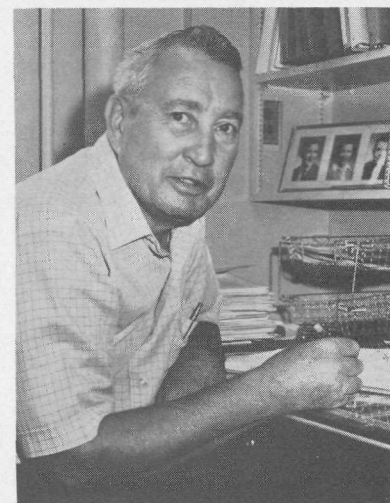
In the new process reported by Dr. Leininger and co-workers, glutaraldehyde is used to crosslink the hydroxyl groups of heparin and thus provide a stable, permanent surface.

Dr. Emlen Bell Retires From Rocky Mt. Lab; Achievements Cited

Dr. Emlen J. Bell, a microbiologist in the Rickettsial Disease Section of NIAID's Rocky Mountain Laboratory, Hamilton, Mont., has retired after a career spanning 34 years.

Last year Dr. Bell, who spent most of his Federal service at RML, received the DHEW Meritorious Service Medal "in recognition of his outstanding achievement in elucidating the biology and immunologic relationships among rickettsial agents and his contributions toward the control of typhus and Rocky Mountain spotted fever."

Dr. Bell's recent contributions include the characterization of a



Dr. Bell is an internationally renowned investigator in the field of rickettsial diseases.

toxin associated with the spotted fever group of rickettsias, the application of the toxin-neutralization test for establishing relationships among eight different species that cause spotted fever throughout the world, and the discovery of a new species of spotted fever rickettsia in eastern Montana.

Early in his career, Dr. Bell's work with Dr. Herald Cox—a former Laboratory scientist—on the cultivation of rickettsias in fertile hens' eggs enabled the production of large amounts of typhus vaccine needed for Allied troops during World War II.

Dr. Bell joined the RML staff in 1938 after receiving the M.S. degree from the University of Minnesota.

Following service in the U.S. Army, he attended the Johns Hopkins School of Hygiene and Public Health and received the Ph.D. degree in microbiology.

He then rejoined the Laboratory staff and was commissioned in the PHS in 1947.

Dr. and Mrs. Bell plan to remain in Hamilton.



At DRG, the Oct. 1 deadline for the receipt of grant applications brings its own harvest—research grant applications by the thousands. Nathaniel Dove, Research Grants Review Branch, looks over the stacks received.



Dr. Frank J. Rauscher, Jr. (c), NCI Director, presents a PHS Commendation Medal to NCI sanitary engineer, W. Emmett Barkley. As the vice-chairman of the Biohazards Control and Containment Segment of the Special Virus Cancer Program, Mr. Barkley has made significant contributions in defining the engineering criteria for the safe operation of NCI biomedical programs. Mrs. Barkley participates in the ceremony.

NIH Visiting Scientists Program Participants

9/1—Dr. Rong-Sen Shen, Taiwan, Pathologic Physiology Branch. Sponsor: Dr. Robert L. Dixon, NIEHS, Research Triangle Park, N.C.

9/29—Dr. Takao Ohta, Japan, Laboratory of Biomedical Sciences. Sponsor: Dr. Joseph C. Robinson, NICHD, Bldg. 10, Rm. 13N232.

10/1—Dr. Eduardo Charreau, Argentina, Reproduction Research Branch. Sponsor: Dr. Kevin Catt, NICHD, Bldg. 10, Rm. 12N218.

10/1—Dr. Nubia Munoz, Colombia, Laboratory of Pathology. Sponsor: Dr. Louis B. Thomas, NCI, Bldg. 10, Rm. 2A29.

10/1—Dr. Shinzo Kono, Japan, Reproduction Research Branch. Sponsor: Dr. Mortimer B. Lipsett, NICHD, Bldg. 10, Rm. 12N204.

10/1—Dr. Nagaswamy Krishnan, India, Laboratory of Chemical Pharmacology. Sponsor: Dr. James R. Gillette, NHLI, Bldg. 10, Rm. 7N119.

10/1—Dr. Sumathy Sampath, India, Laboratory of Preclinical Pharmacology. Sponsor: Dr. Erminio Costa, NIMH, St. Elizabeths Hospital, Washington, D.C.

10/9—Dr. Toshio Kudo, Japan, Immunology Section. Sponsor: Dr. Tadao Aoki, NCI, Bldg. 41, Rm. 300.

10/10—Dr. Sigfrido Scarpa, Italy, Laboratory of General and Comparative Biochemistry. Sponsor: Dr. Giulio Cantoni, NIMH, Bldg. 36, Rm. 3A19.

10/17—Dr. Shigeharu Urakabe, Japan, Laboratory of Kidney and Electrolyte Metabolism. Sponsor: Dr. Jack Orloff, NHLI, Bldg. 10, Rm. 6N307.

Experts Explore Sub-atomic Particles' Role in Radiation Treatment of Cancer

When 350 experts on cancer treatment, cancer biology, and radiation physics met recently at the Los Alamos Scientific Laboratory in New Mexico, they discussed Particle Accelerators in Radiation Therapy.

The conference was initiated to explore the role of sub-atomic particles—such as neutrons, pi-mesons, and other "heavy particles"—in the radiation treatment of patients with cancer.

It was co-funded by the National Cancer Institute's Division of Cancer Grants with the Atomic Energy Commission and the National Science Foundation. The Division's deputy director, Dr. William A. Walter, described NCI's radiation program for the participants.

Dr. William E. Powers, of the Mallinckrodt Institute of Radiology, Washington University School of Medicine, St. Louis, was chairman, and Dr. Raul Mercado, Jr., program director for radiation therapy in the Institute's Division of Cancer Grants, assisted with conference arrangements.

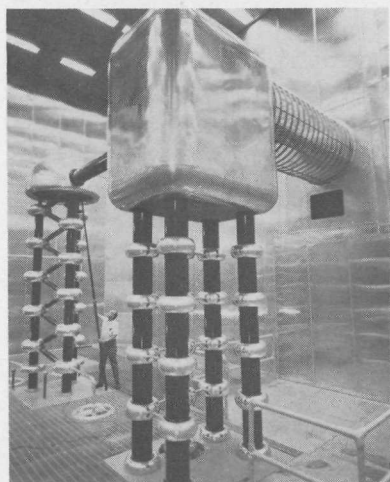
The use of accelerated particles is of interest to radiotherapists who believe that such high LET (linear energy transfer) radiation may do more damage to some kinds of cancer tissue and less damage to surrounding normal tissue than does conventional X-ray or cobalt radiation.

Research Indicates Benefits

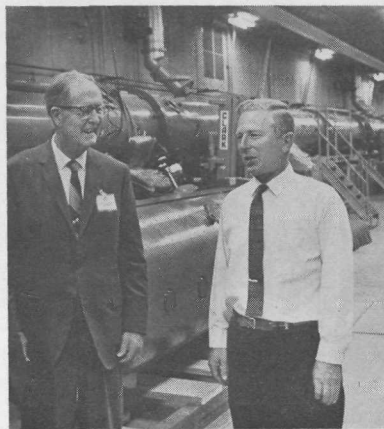
Previous research suggests that advanced cancers of the mouth, throat, cervix, and bladder, for example, may benefit from treatment with high LET irradiation.

Scientists at the conference defined several areas of urgently needed research. In the opinion of a number of speakers, the study of the late effects of high LET radiation on normal animal tissue has the highest priority.

The keynote paper of the Bio-



Protons in the primary beam of the Meson facility start their half-mile flight to the target area from this Cockcroft-Walton generator where the particles receive their first boost in energy to 750 kilo electron volts.



Sen. Clinton P. Anderson of New Mexico (l) tours the beam tunnel of the Los Alamos Meson Physics Facility—formally dedicated in his honor on Sept. 29—with Dr. Louis Rosen, its director. Dr. Rosen gave the keynote address on physics research at the Radiation Therapy Conference.

medical Problems session was given by Dr. Simon Kramer, chairman of the department of radiation therapy, at Thomas Jefferson University Hospital in Philadelphia.

The weakest link in radiation therapy, he said, is the inability to define the precise location of the cancer.

Other investigators also stressed the need for such research as well as the belief that studies of the late effects of high LET radiation should be started immediately.

Dr. Mary Catterall's report on the treatment of patients with fast neutrons from the British Medical Research Council's Cyclotron at Hammersmith Hospital, London, was a conference highlight.

Stressing the importance of a learning period before controlled clinical trials are undertaken, she summarized the results of treating 190 patients who had advanced tumors not thought to be responsive to other forms of therapy. A high rate of remissions of varying durations has resulted.

A Review of the Basis of Heavy Particle Therapy and Past Clinical Trials was presented by Dr. J. F. Fowler, Gray Laboratory, Mt. Vernon Hospital, Northwood, Middlesex, England.

He concluded: "The neutron therapy trial at Hammersmith and the radiobiological work which preceded and accompanies it, at Hammersmith and Rijswijk and elsewhere, have demonstrated that high LET radiation can be used safely and conveniently to treat patients.

"Whether the control of cancer

DR. THOMAS

(Continued from Page 1)

and Human Development Council, President's Science Advisory Committee, and is currently a member of the Institute of Medicine of the National Academy of Sciences.

Dr. Thomas is a member of several scientific societies including the American Society for Clinical Investigation, International Academy of Pathology, Society for Experimental Biology and Medicine, and an honorary member of Societe Francaise d'Allergie.

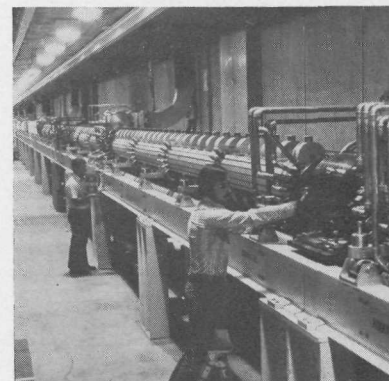
NIH has presented the Jules Freund Memorial Seminar annually since 1961 in honor of the first chief of the National Institute of Allergy and Infectious Diseases' Laboratory of Immunology.

is also improved will not be known for several years yet."

A six-point plan for the development of high LET radiation therapy was presented by Dr. Morton M. Kligerman, assistant director for radiation therapy of Los Alamos Scientific Laboratory.

This included a quarterly publication of pertinent information on clinical trials, an international dose determination registry, international clinical trials, postdoctoral fellowship programs, visiting senior scientists programs, and encouragement of all radiation centers to take a fresh look at their current low LET radiation policies.

A tour of the Los Alamos Meson Physics Facility focused on the potential use in cancer therapy of



The side-coupled cavity section, designed and developed at the Los Alamos Scientific Laboratory, is the third stage of the accelerator. It is here that the particles receive the final boost to 800 million electron volts, or 84 percent the speed of light.

the pi-mesons produced at the "meson factory."

A biomedical facility under construction at the site has been partially funded by the NCI Division of Cancer Grants.

It is anticipated that preclinical radiation research will begin at the facility sometime in 1973 and clinical evaluation in 1975.

Dr. Whitney Heads DRS Veterinary Resources Br. PHS Issues New Rules for Shipment of Certain Special Infectious Agents

Dr. Robert A. Whitney, Jr., has been named chief, Veterinary Resources Branch, Division of Research Services. Dr. Whitney will head laboratory animal research activities on the campus and at the NIH Animal Center at Poolesville, Md. He also will supervise the preparation of media and laboratory glassware.



Dr. Whitney

Prior to this appointment, Dr. Whitney was program specialist for the Institutional Animal Resource Improvement Program, Animal Resources Branch, Division of Research Resources.

Dr. Joe R. Held, DRS Director, stated that "Dr. Whitney has an outstanding record of . . . responsibility in the laboratory animal care field. He has contributed significantly to veterinary and research animal literature . . ."

Before coming to NIH, Dr. Whitney was a lieutenant colonel in command of U.S. Army veterinary activities in Vietnam.

Previously, he was Laboratory Animal Medicine consultant to the Surgeon General of the Army.

Earlier, Dr. Whitney established and directed the U.S. Army Veterinary Corps Postdoctoral Training Program in Laboratory Animal Medicine and was chief of the Animal Resources Branch, Edgewood Arsenal.

He has received the Legion of Merit and the Meritorious Service Medal, and in 1969, he was included in the publication, *Outstanding Young Men of America*.

Dr. Whitney received his B.S. and D.V.M. degrees from Oklahoma State University, and his M.S. in pharmacology from Ohio State University.

Dr. Goodall to Deliver NIH Lecture Tomorrow at CC

Dr. Jane Goodall will give the NIH Lecture tomorrow night (Wednesday, Nov. 8) at 8:15 in the Jack Masur Auditorium.

The noted British scientist will discuss her primate research in East Africa. She will illustrate her talk with slides of wild chimpanzees in Tanzania's Gombe Stream Game Reserve. She has lived among the chimps and studied their habits for a number of years.

Dr. Goodall is visiting professor in the Department of Psychiatry, Stanford University School of Medicine.



ETIOLOGIC AGENTS

BIOMEDICAL MATERIAL

IN CASE OF DAMAGE OR LEAKAGE

**NOTIFY: DIRECTOR, CDC
ATLANTA, GEORGIA
404/633-5313**

New Public Health Service regulations have recently become effective concerning the shipment of certain etiologic agents in, and from, the United States.

Three significant areas are covered by the latest revision—packaging, labeling, and special handling for certain infectious agents.

One of these, packaging, makes a requirement of formerly recommended procedures. This involves the use of primary, secondary, and outside containers and absorbent lining materials for transporting various bacterial, fungal, viral, rickettsial, and chlamydial agents.

New Label Designed

A special Etiologic Agents/Biomedical Material label has been designed which must be applied to the outside of the package. The label is made as an adhesive sticker in white and red (international orange).

It should not be confused with the black-and-red on white adhesive import permit which must be on the outside of all packages containing etiologic agents or their vectors imported to the U.S.A. or subsequently transshipped. (See the *NIH Record*, May 9, 1972, p. 6.)

Registered mail, or a similar system, now must be used when sending *Actinobacillus mallei*, *Coccidioides immitis*, *Francisella (Pasteurella) tularensis*, hemorrhagic fever agents, *Herpesvirus simiae* (B virus), and *Histoplasma capsulatum*.

Also, Lassa virus, Marburg virus, *Pseudomonas pseudomallei*, tick-borne encephalitis virus complex, and *Yersenia (Pasteurella) pestis*.

If notice of delivery of these agents is not received within 5 days of anticipated delivery, the sender must notify the Director of the Center for Disease Control in Atlanta, Ga.

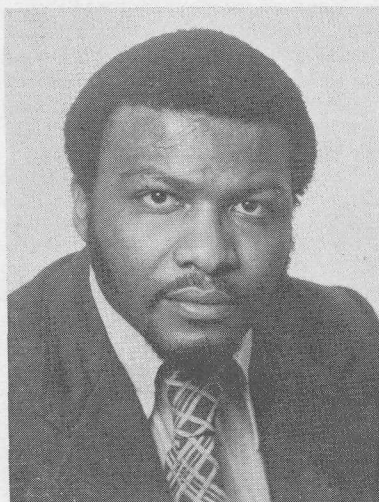
A centralized NIH Quarantine Permit Service Office was established in 1970 in the National Institute of Allergy and Infectious Diseases. It issues the necessary licenses and permits to the Institutes and Divisions in accordance with Issuance No. 1340-1 of the NIH Manual, *Permits and Licenses*

for the Shipments of Etiologic Agents and Vectors.

The new Etiologic Agents label may be obtained by NIH scientists from the NIH Quarantine Permit Service Office, Bldg. 31, Rm. 7A-50, Ext. 62516.

Eventually, the General Services Administration plans to distribute the labels in a manner similar to that for stationery products. Until that time, the Permit Office will handle them.

Non-NIH scientists should inquire of the Center for Disease Control, Atlanta, Ga. 30333, about a source for the new labels.



Roy Chisholm has been appointed EEO coordinator for the National Cancer Institute. Before joining NCI, Mr. Chisholm was a personnel management specialist at the Department of Agriculture. Prior to this assignment, he spent a year at Howard University where he earned his M.A. in student personnel/guidance and counseling. He also served in Howard's Office of Student Life as an Assistant to the Director.

Soviet Surgeon-Scientist Tours Research Facilities

Dr. Valeriy I. Shumakov, professor of surgery and chief of the Transplantation and Artificial Organs Department of the Research Institute of Clinical and Experimental Surgery in Moscow, recently concluded a month-long tour of U.S. medical research facilities.

He was primarily interested in seeing experimental and clinical studies of organ transplantation and artificial organ research and development.

Dr. Shumakov's host and traveling companion during most of this



Dr. Shumakov (l), Russian authority on organ transplantation and artificial organs, bids farewell to Dr. Dennis, following their tour of U.S. medical facilities.

tour, which was a part of the U.S.-U.S.S.R. Cooperative Health Program on Disease, was Dr. Clarence Dennis, director of the NHLI Division of Technological Applications.

Together, they visited 21 U.S. laboratories, surgery clinics, and research and development firms.

These included personal conferences with Dr. Thomas Starzl of the University of Colorado, Dr. Michael DeBakey of Baylor College of Medicine, Drs. Denton Cooley and John Norman, St. Luke's-Texas Children's Hospital, Houston, Drs. William Bernhard and Grant LaFarge at Harvard Medical School, and a tour of Dr. Willem Kolff's Artificial Organ Laboratory at the University of Utah.

Witness Transplant

They also observed a clinical heart transplant operation performed by Dr. Norman Shumway at Stanford University.

Dr. Shumakov, who is co-winner of the 1972 U.S.S.R. State Prize for Transplantation, also attended meetings of the Transplantation Society and the American College of Surgeons in San Francisco, and participated in formal ward rounds and the Annual Student Forum at Downstate Medical Center in New York.